

REMARKS

Claims 1-10 and 12-21 are pending in the current application. Claims 1, 7, 8 and 9 are independent claims. In view of the above remarks and following remarks, favorable reconsideration and allowance of the present application is respectfully requested.

Initially, Applicants appreciate the Examiner's acknowledgment that all certified copies pertaining to foreign priority claimed under 35 U.S.C. §119 have been received and the indication that the references submitted in the Information Disclosure Statements filed on December 23, 2005 and May 22, 2006 have been considered.

I.

CLAIM AMENDMENTS

By the present Amendment, Applicants submit that independent claim 1 has been amended to recite "an extraction rate of the multivalent metal component around a surface of said particulate water absorbent resin is 5.0 wt % or more and less than 100 wt %." Applicants submit that support for this amendment can be found at least on page 40, line 18 - page 42, line 5 of the Specification, as originally-filed.

Independent claims 8 and 9 have been amended (*albeit*, in different formats) to recite "a concentration of the multivalent metal component contained in a mixed solution including the solution of the aqueous multivalent metal compound (B) and the organic surface cross-linking agent (C) is at least 1.80 wt %." Applicants submit that support for these amendments can be found at least on page 63, line 12 – page 65, line 5 of the Specification, as originally-filed.

Thus, Applicants submit that the amendments do not introduce any new matter.

II. 35 U.S.C. §112, SECOND PARAGRAPH REJECTION

Claims 1-21 stand rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter of the invention. Applicants respectfully traverse the rejection.

By the present Amendment, claims 1, 2, 7, 8 and 9 have been amended to remove the term “vicinity.” As such, claims 1, 2, 7, 8 and 9 now recite (*albeit*, in different formats) a particulate water absorbent resin (A) having a “cross-linked” surface. Applicants submit that the support for these amendments can be found at least on page 27, lines 17-23 of the Specification, as originally-filed Specification.

Accordingly, Applicants submit that the section 112 rejection to claims 1-21 has been overcome. Accordingly, reconsideration and withdrawal is respectfully requested.

III. EXAMPLE EMBODIMENTS

Applicants submit that example embodiments teach that

When the extraction rate of the multivalent metal component is too high, it is impossible to evenly mix the multivalent metal compound with a surface of the water absorbent resin, so that the moisture absorption blocking property in high humidity cannot be improved. Further, in case where the extraction rate of the multivalent metal component is less than 5.0 %, the multivalent metal component penetrates into the water absorbent resin. This drops the centrifuge retention capacity (CRC), the diffusing absorbency under pressure (DAP), and/or the absorbency against pressure (AAP). Further, it is impossible to realize such improvement of the moisture absorption blocking property in high humidity that corresponds to the cost, and it is impossible to improve the liquid permeation/liquid diffusing property.

Specification, p. 41, l. 13 - p. 42, l. 5.

Furthermore, “[t]he solution of the highly concentrated multivalent metal compound (B) (at least 1.80 wt% of the multivalent metal component is contained in the aqueous solution) is mixed with the particulate water absorbent resin, so that the multivalent metal component exists around a surface layer of the water absorbent resin after preparing the mixture. As a

result, the moisture absorption blocking property and the liquid permeation/liquid diffusing property are remarkably improved.” Specification, pg. 63, ll. 3-11.

Other example embodiments teach that it is possible to use two methods (i) and (ii) to prepare the water absorbent resin composition. In method (i), example embodiments teach that “...a solution of the multivalent metal compound (B) and the organic surface cross-linking agent (C) are separately or simultaneously mixed with the particulate water absorbent resin (A)...” Specification, pg. 51, ll. 11-19. In method (ii), example embodiments teach that “...a mixture solution prepared by mixing the solution of the multivalent metal compound (B) with the organic surface cross-linking agent (C) is mixed with the particulate water absorbent resin (A).” Specification, pg. 63, ll. 21-24.

IV.

CITED ART GROUNDS

Claims 1-4 and 7-21 stand rejected under 35 U.S.C. §102(b) as allegedly being anticipated by or, in the alternative, under 35 U.S.C. §103(a) as being obvious over Mertens et al. (hereinafter “Mertens”), U.S. Patent No. 6,605,673; claims 1-6 stand rejected under 35 U.S.C. §102(a) as allegedly being anticipated by or, in the alternative, under 35 U.S.C. §103(a) as being obvious over Hatsuda et al. (hereinafter “Hatsuda”), U.S. Patent No. 6,562,879; claims 1-4 stand rejected under 35 U.S.C. §102(e) as allegedly being anticipated by or, in the alternative, under 35 U.S.C. §103(a) as being obvious over Nakashima et al. (hereinafter “Nakashima”), U.S. Patent Publication No. 2004/0106745 A1. Applicants respectfully traverse the rejections.

A. INDEPENDENT CLAIM 1

Independent claim 1 has been amended to recite a water absorbent resin composition including wherein “an extraction rate of the multivalent metal component around a surface of said particulate water absorbent resin is 5.0 wt % or more and less than 100 wt %.” Applicants submit that non-limiting, example embodiments may be found throughout the Specification. Applicants submit that the art cited by the Examiner fails to teach or suggest the above features recited in amended independent claim 1.

i. Mertens

Acknowledging the deficiencies of Mertens, the Examiner states that Mertens is silent with respect to properties of the water resin particle and the composition, for example, “[an] extraction rate of [the] multivalent metal component of claim 1...However, in light of the fact that the prior art teaches/ discloses essentially the same composition and process as that of the claimed, one of ordinary skill in the art would have a reasonable basis to believe that the water absorbent resin composition of [the] prior art exhibits essentially the same property(ies). Since [the] PTO cannot conduct experiments, the burden of proof is shifted to the applicants to establish an unobviousness difference.” Action, pp. 5-6. Applicants submit that the Specification, as originally-filed, establishes an unobvious difference between the claimed invention and the cited art.

Namely, referring to Example 3 of Mertens, Mertens teaches that a solution was prepared by mixing 100g of powdered crosslinked polyacrylic acid (powder D) with 1g of ethylene glycol, 3.0g of water and 0.5g of aluminum sulfate 18-hydrate and subsequently heated in an oven. See Mertens, col. 11, ll. 35-55.

Applicants now direct the Examiner’s attention to Comparative Example 8 in the present Specification. Applicants note that Comparative Example 8 was conducted with

reference to the manufacturing method of Published Japanese Translation of International Publication of Patent Application No. 539281-2002 (Tokuhyo) (WO 00/53644), which is in the same patent family as Mertens. In Comparative Example 8, "...a mixture solution obtained by mixing 1.0 g of ethyleneglycol, 3.0 g of pure water, and 0.5 g of aluminum sulfate tetradecahydrate was evenly mixed with 100g of the water absorbent resin (A1) obtained in the Referential Example 6, thereby obtaining a comparative precursor (2). Thus obtained comparative precursor 2 was thermally processed at 180°C for 30 minutes." Specification, p. 106, ll. 16-23 (emphasis added). Thus, Applicants submit that Comparative Example 8 includes a similar composition as Example 3 of Mertens.

Moreover, as shown in Table 4 of the present Specification, the extraction rate (M) of Comparative Example 8 is 2.9 wt %, lower than the "5.0 wt % or more" as recited in independent claim 1.

Furthermore, even assuming *arguendo* that Mertens taught an extraction rate of the multivalent metal component is "5.0 wt % or more and less than 100 wt %" as recited in amended independent claim 1 (which Applicants do not agree with), Applicants submit that Mertens fails to suggest that the multivalent metal component is "around a surface of said particulate water absorbent resin" as recited in amended independent claim 1.

As such, Applicants submit that Mertens fails to teach or suggest that "an extraction rate of the multivalent metal component around a surface of said particulate water absorbent resin is 5.0 wt % or more and less than 100 wt %" as recited in amended independent claim 1.

Accordingly, Applicants submit that Mertens fails to teach or suggest all the features of amended independent claim 1.

ii. Hatsuda

Hatsuda fails to teach, or suggest, a multivalent metal component. Thus, Hatsuda fails to cure the deficiencies of Mertens with respect to amended independent claim 1.

As such, Applicants submit that Hatsuda, individually or in combination of Mertens, fails to teach or suggest that “an extraction rate of the multivalent metal component around a surface of said particulate water absorbent resin is 5.0 wt % or more and less than 100 wt %” as recited in amended independent claim 1.

Accordingly, Applicants submit that Hatsuda fails to teach or suggest all the features of amended independent claim 1.

iii. Nakashima

Nakashima also fails to teach, or suggest, a multivalent metal component. Thus, Nakashima fails to cure the deficiencies of Mertens with respect to amended independent claim 1.

As such, Applicants submit that Nakashima, individually or in combination with Mertens or Hatsuda, fails to teach or suggest that “an extraction rate of the multivalent metal component around a surface of said particulate water absorbent resin is 5.0 wt % or more and less than 100 wt %” as recited in amended independent claim 1.

Accordingly, Applicants submit that Nakashima fails to teach or suggest all the features of amended independent claim 1.

B. INDEPENDENT CLAIM 7

Independent claim 7 recites a method for producing a water absorbent resin composition wherein “a concentration of the aqueous multivalent metal compound (B) in the solution is 0.40 or more with respect to a saturated concentration of the aqueous multivalent

metal compound (B) in the solution.” Non-limiting example embodiments may be found through the Specification. Applicants submit that the art cited by the Examiner fails to teach, or suggest, the above features of amended independent claim 7.

i. Mertens

Applicants submit that Mertens fails to teach, or suggest, the concentration of the aqueous multivalent compound (B) in the solution is 0.40 or more with respect to a saturated compound of the aqueous multivalent metal compound (B) in the solution, as similarly recited in independent claim 7.

Furthermore, in view of the above comparison of Example 3 and Comparative Example 8, Applicants respectfully submit that Mertens’s disclosure supports the position that the differences between example embodiments of the present invention and the subject matter of Mertens give rise to unexpected results. That is, Applicants submit that the Specification of the present invention, as originally-filed, and Mertens establish an unobvious difference between the claimed invention and the cited art.

As such, Applicants submit that Mertens fails to teach, or suggest, a method for producing a water absorbent resin composition wherein “a concentration of the aqueous multivalent metal compound (B) in the solution is 0.40 or more with respect to a saturated concentration of the aqueous multivalent metal compound (B) in the solution” as recited in independent claim 7.

C. INDEPENDENT CLAIM 8

Independent claim 8 has been amended to recite “a concentration of the multivalent metal component contained in a mixed solution including the solution of the aqueous multivalent metal compound (B) and the organic surface cross-linking agent (C) is at least 1.80 wt %.” Non-limiting example embodiments may be found through the Specification. Applicants submit that the art cited by the Examiner fails to teach, or suggest, the above features of amended independent claim 8.

i. Mertens

Applicants submit that the Mertens teaches calculating the concentration of the multivalent metal component using method ii) discussed above. That is, each of Examples 1-4 and Comparative Examples 1-12 in Mertens uses a mixed solution including a solution of the multivalent metal compound and an organic surface cross-linking agent. The concentration of the multivalent metal component is calculated as the concentration of the multivalent metal component in the mixed solution.

For instance, because Comparative Example 8 in the present Specification and Example 1 of the Mertens have a similar composition (as discussed above) and are prepared according to method ii), Applicants submit that one of ordinary skill in the art would recognize that the concentration of the multivalent metal component in Comparative Example 8 in the present Specification and Example 1 of Mertens are similar.

Referring to Table 4 of the present Specification, Applicants submit the concentration of the multivalent metal component in Comparative Example 8 is 1.01 wt %. The concentration of the multivalent metal component is calculated as follows:

$$[X] = (S/T) \times 100 = (0.5 / (1.0 + 3.0 + 0.5)) \times 100 = 11.1 \text{ wt\%}$$

$$[Y] = [X] \times (MW_{AL} \times 2 / MW_{AL_2(SO_4)_3}) = 11.1 \times (27 \times 2 / 594.37) = 1.008 \text{ wt \%} \square 1.01 \text{ wt\%}$$

wherein X is the concentration of the multivalent metal compound in the surface cross-linking agent, S is the weight of the $\text{Al}_2(\text{SO}_4)_3 \cdot 14\text{H}_2\text{O}$, T is the combined weight of the ethylene glycol, water and $\text{Al}_2(\text{SO}_4)_3 \cdot 14\text{H}_2\text{O}$, and Y is the concentration of the multivalent metal component.

Applicants submit that if the concentration of the multivalent metal component in Example 1 of Mertens is calculated using the same calculations, then the concentration is 1.13 wt%, lower than the “at least 1.80 wt%” as recited in amended independent claim 8.

Thus, Applicants submit that Mertens fails to teach, or suggest, “a concentration of the multivalent metal component contained in a mixed solution including the solution of the aqueous multivalent metal compound (B) and the organic surface cross-linking agent (C) is at least 1.80 wt %” as recited in amended independent claim 8.

D. INDEPENDENT CLAIM 9

Independent claim 9 has been amended to recite “a concentration of the multivalent metal component contained in a mixed solution including the solution of the multivalent metal compound (B) and the organic surface cross-linking agent is at least 1.80 wt %.” Accordingly, Applicants submit that amended independent claim 9 is patentable over the cited art for reason analogous to those discussed above with respect to amended independent claim 8.

CONCLUSION

Accordingly, in view of the above, reconsideration of the rejections and allowance of each of claims 1-10 and 12-21 in connection with the present application is earnestly solicited.

Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), Applicants hereby petition for a one (1) month extension of time for filing a reply to the outstanding Office Action and submit the required \$120.00 extension fee herewith.

Should there be any matters that need to be resolved in the present application; the Examiner is respectfully requested to contact the undersigned at the telephone number below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

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